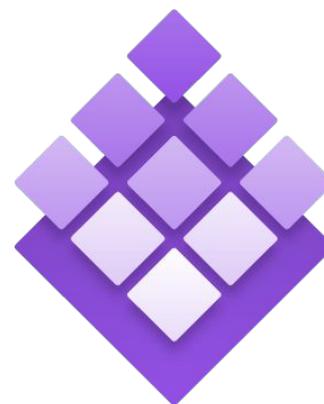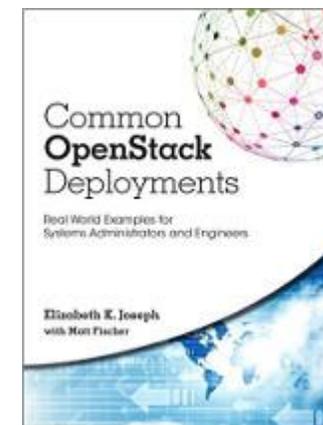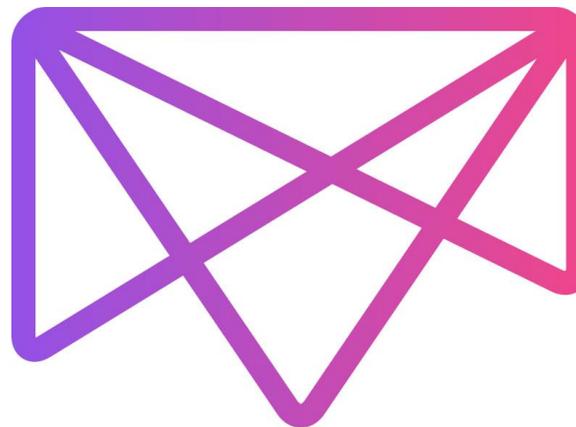# The Open Sourcing of Infrastructure

Fosscon 2017
Elizabeth K. Joseph
@pleia2

MESOSPHERE

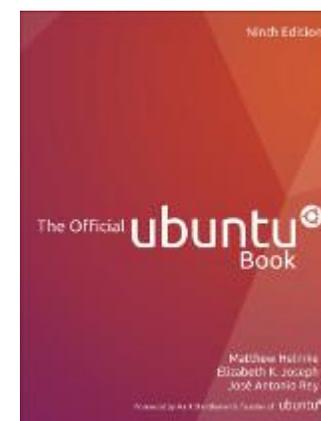# Elizabeth K. Joseph, Developer Advocate

- Developer Advocate at Mesosphere working on DC/OS, Apache Mesos
- 15+ years working in open source communities
- 10+ years in Linux systems administration and engineering roles
- Founder of OpenSourceInfra.org
- Author of The Official Ubuntu Book and Common OpenStack Deployments

The [recent] history of infrastructure

(from a highly opinionated, open source view)

"To make a server, first add…"
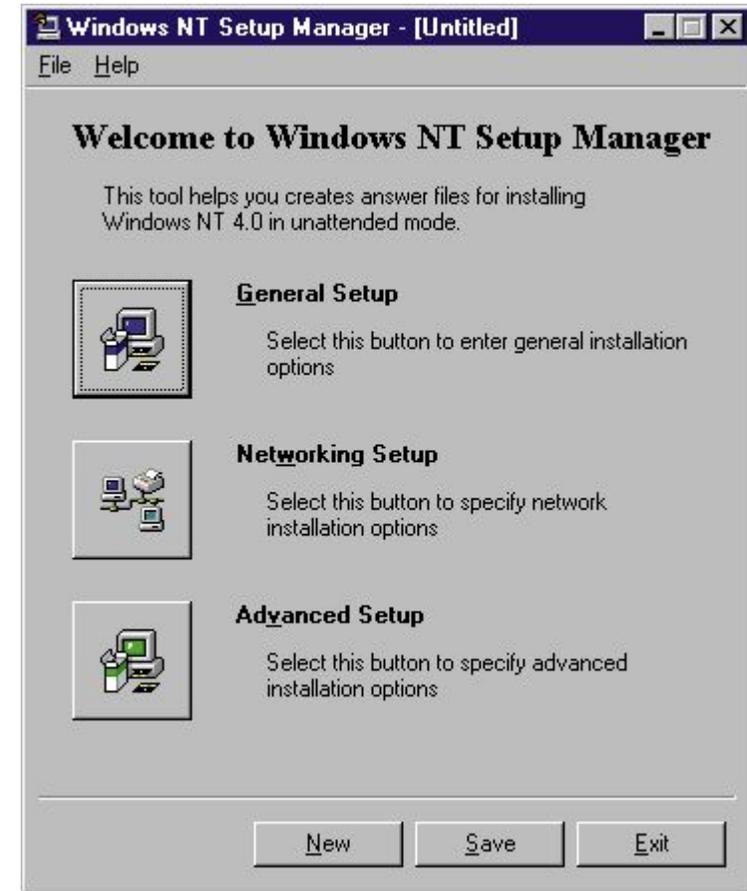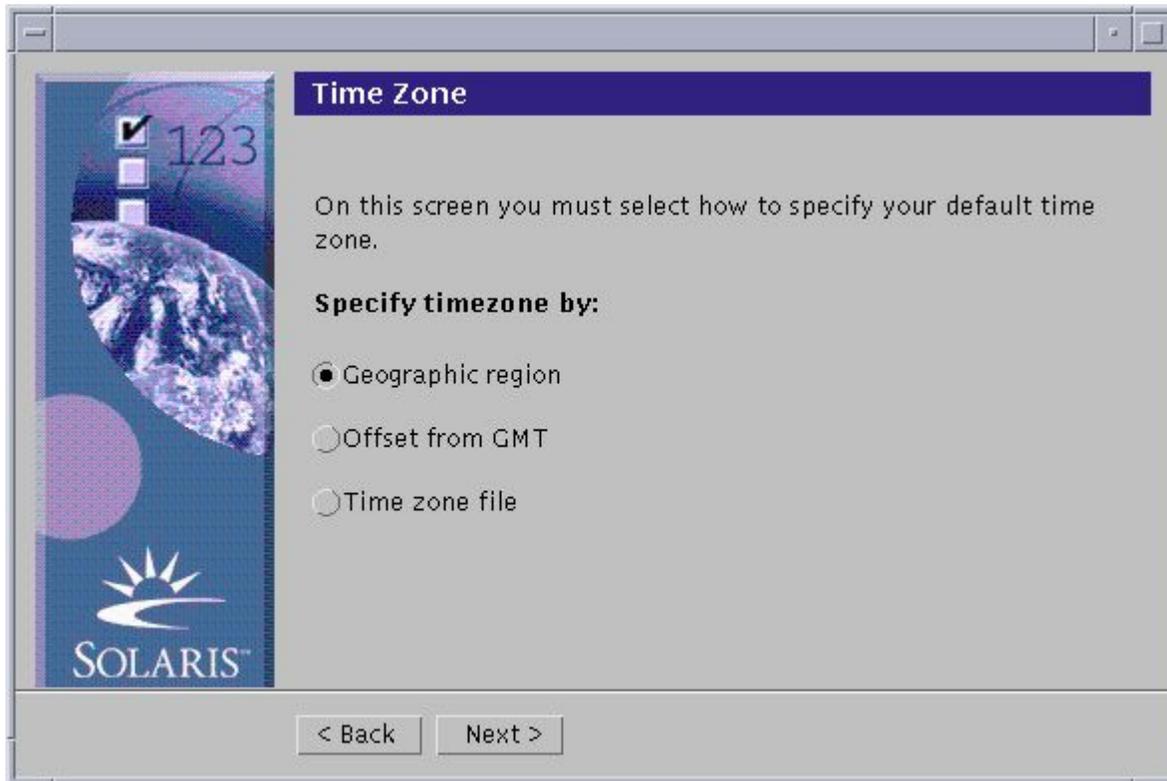
And so rose the proprietary world of software

With proprietary Unix and Windows-based platforms, the stage was set for the golden age of proprietary software in the 1990s and into the 2000s.
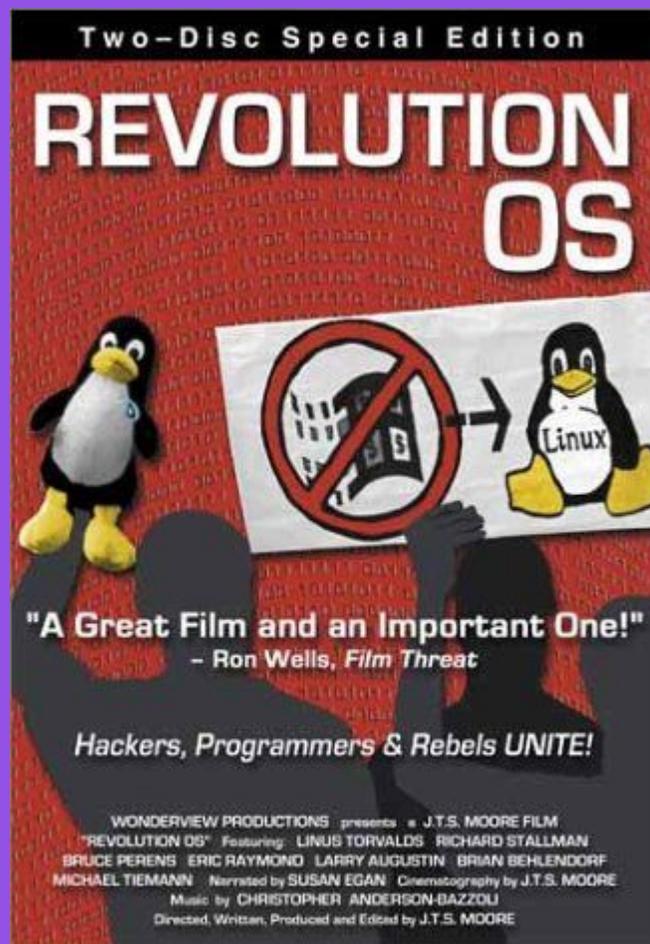
Linux was an upstart, at best seen as "cheap Unix"

Lots of FUD around open source

I liked it anyway.

So I got a junior Linux systems administrator job!

Some of the topics during a seminar I spoke at in the 00s

- What is Free/Open Source Software (FOSS)?
- How & Why Linux and FOSS can Deliver Business Results
- Managing FOSS: Thousands of Alternatives - How To Choose?
- Using Open Source Web Applications to Produce Business Results

Turning point: LAMP stack

Flood of changes to how we interact with software

Reluctance to be locked-in by a vendor

Greater concern over security

Wanted the ability to fix bugs ourselves

Learned that innovation is stifled when software is developed in isolation

Flood of changes to how we use software

Downtime becoming [considerably more] unacceptable

Increase in reliance upon scaling and automation

Transition from server "pets" to "cattle"

Larger focus on data (retention, speed)

Open source is now ubiquitous

Organizations with the most open source contributors

	Microsoft	16,419
	facebook	15,682
	docker	14,059
	angular	12,841
	google	12,140
	atom	9,698
	FortAwesome	9,617
	elastic	7,220
	Apache	6,999
	npm	6,815

Source: "The state of the Octoverse 2016" https://octoverse.github.com/

Developers are using, developing on, **contributing to, and sharing** open source software!

🎉

Operations is using and developing on open source software.

〰️

When I left my ops job, I left my tools behind

Time to open source ops stuff!

Done!

Configuration management

Puppet Modules, Chef Cookbooks, Ansible Playbooks

Open application definitions

DC/OS Universe catalog, Juju Charms

Full disk images

Dockerhub and other container registries

Welcome to the present!

Open Sourcing Infrastructure:

PHASE 2

What were some of the reasons for going open source in the first place?

- Security
- Ability to diagnose and fix bugs without vendor intervention
- Increased control over our data and services
- Avoiding vendor lock-in

The Cloud.

Including IaaS, PaaS, SaaS...

"Most people just consume the cloud without thinking ... many users are sinking cost into infrastructure that is not theirs, and they are giving up data and information about themselves without thinking."

Edward Snowden, OpenStack Summit, May 9, 2017

Let's think.

Is the service I'm using adhering to open standards, or am I locked in?

What is my recourse if the service vendor goes out of business

...or is bought by a competitor?

Does the vendor have a history of communicating clearly and honestly with their customers about downtime, security, etc?

Does the vendor respond to bugs and feature requests?

Will the vendor use our data in a way that I'm not comfortable with?

(or worse, isn't allowed by your own customer agreements)

Initial costs may be low, but do you have a plan to handle long term, growing costs?

You *could* consider all these things and acknowledge them as acceptable risks.

Many organizations do!

Just make sure you are *actually*, *seriously* considering them

Or look again to Open Source!

Various infrastructure technologies are available:

- OpenStack
- Kubernetes* and Docker swarm mode*
- DC/OS*
- ...more in the future!

* Can be used in the cloud or on premises

Even further
into the future

Open Source the Whole Stack

Infrastructure, configurations, tools, images

OpenStack   OSUOSL   KDE & Gnome   Debian & Ubuntu

And more at opensourceinfra.org

What do these projects get?

Contributions from anyone, anywhere

Vendor independence

No lock-in

Community ownership

Questions?

Slides

http://princessleia.com/presentations/2017/

"Why open source should be the first choice for cloud-native environments" article

https://opensource.com/article/17/8/open-sourcing-infrastructure

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